

Xiurui Zhao (赵修瑞)

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Research Interests

High Energy process of Active Galactic Nuclei and Supermassive Black Holes

Appointments & Fellowships

University of Illinois Urbana-Champaign, Urbana, U.S. **2023-**

Post-Doctoral Research Fellow, advisor: Prof. Yue Shen

Center for Astrophysics | Harvard & Smithsonian, Cambridge, U.S. **2021-2023**

Post-Doctoral Research Fellow, advisor: Dr. Francesca Civano, Dr. Martin Elvis

Center for Astrophysics | Harvard & Smithsonian, Cambridge, U.S. **2020-2021**

Pre-Doctoral Fellow, advisor: Dr. Francesca Civano

Education

Clemson University, Clemson, U.S. **2016-2021**

Ph.D. in Astrophysics, advisor: Prof. Marco Ajello

Dissertation: *Heavily Obscured Active Galactic Nuclei in NuSTAR Era*

Lanzhou University, Lanzhou, China **2012-2016**

B.Sc. in Physics, Cuiying Honors College

Honors and Awards

Clemson University Outstanding Graduate Researcher Award (2 winners each year) **2021**

Clemson Science College Outstanding Graduate in Discovery Award **2021**

Clemson Physics Department Graduate Research Assistant Award **2021**

SAO Predoctoral Fellowship **2020-2021**

Clemson Graduate Student Travel Grant **2019, 2021**

Cuiying Honors College Abroad Study Fellowship **2014, 2015**

Accepted Scientific Proposals as PI

16 accepted X-ray/optical/mm proposals with **\$370k** grant:

X-ray (1.6 Ms)

NuSTAR Guest Investigator Program (**Large**, 500 ks *NuSTAR* + 142 ks XMM, \$130k) **2023**

Swift-XRT Guest Investigator Program (18 ks) **2023**

NuSTAR Guest Investigator Program (**Large**, 600 ks *NuSTAR* + 195 ks XMM, \$150k) **2022**

Swift-XRT ToO (3 ks) **2022**

NuSTAR Guest Investigator Program (100 ks *NuSTAR* + 60 ks XMM, \$90k) **2021**

Optical (5 nights)

MMT 6.5m Hectospec (0.3 night, 200 sources)	2023A
MMT 6.5m Binospec (0.4+0.1 night)	2023A
SAO FLWO 1.5m FAST (0.2 night)	2023A
SAO FLWO 1.2m Keplercam (1 night)	2023A
MMT 6.5m Hectospec (0.3 night, 135 sources)	2022B
MMT 6.5m Binospec (0.1 night)	2022B
SAO FLWO 1.2m Keplercam (1 night)	2022B
MMT 6.5m Binospec (0.1 DDT night)	2022A
SAO FLWO 1.2m Keplercam (2 nights)	2022A

Sub-mm (3 tracks)

Submillimeter Array (SMA) standard science observation (3 tracks)	2022B
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Professional Service

Core Member of <i>HEX-P</i> Black Hole Growth/Corona Working Group	2022-present
Member of <i>JWST</i> PEARLS Working Group	2022-present
Member of <i>AXIS</i> AGN/TDA Science Working Group	2022-present
Member of <i>NuSTAR</i> Extragalactic Survey Team	2020-present
Member of <i>Athena</i> Science Working Group	2020-present
Panelist for <i>NASA</i> Proposal Review	2022, 2023
Reviewer for CFHT	2022A,B
Reviewer for ApJ, A&A	2020-present
Co-organizers of CfA High Energy Astrophysics Division Seminar	2021-2023

Invited Talks

Zhejiang University, colloquium	Sep 2023
Peking University, KIAA-DoA seminar	Aug 2023
Tsinghua University, seminar	Aug 2023
University of Illinois Urbana-Champaign, local group meeting	May 2023
Yale University, Galaxy Lunch Talk	Apr 2023
MIT, Brown Bag Lunch Talk	Apr 2023
NASA GSFC X-ray Astrophysics Laboratory AGN Seminar (Virtual)	Feb 2023
Center for Astrophysics Harvard & Smithsonian, High Energy Seminar	Feb 2023
Arizona State University, Cosmology Seminar	Dec 2022
University of Arizona, Steward Observatory / NOIRLab Galaxy group meeting	Dec 2022
MIT, High Energy Astro Group meeting (Virtual)	Apr 2022
Clemson University, Local Group meeting	Apr 2022
INAF OAS, Bologna, local group meeting	Sep 2019

Conferences & Contributed Talks

High Energy Astrophysics Division 20th Meeting (<i>Contributed Talk</i>)	Waikōloa, Mar 2023
241st AAS Meeting (<i>Contributed Talk</i>)	Seattle, Jan 2023
NuSTAR 2022 Conference (<i>Contributed Talk</i>)	Italy, June 2022
New England Regional Quasar and AGN Meeting (<i>Contributed Talk</i>)	Storrs, May 2022
High Energy Astrophysics Division 19th Meeting (<i>Poster</i>)	Pittsburgh, Mar 2022
Black Hole Across Space and Time (<i>Contributed Talk</i>)	Virtual, Dec 2021
238th AAS Meeting (<i>Dissertation Talk</i>)	Virtual, June 2021
237th AAS Meeting (<i>Contributed Talk</i>)	Virtual, Jan 2021
Supermassive Black Holes Meeting (<i>Contributed Talk</i>)	Virtual, Dec 2020
235th AAS Meeting (<i>Contributed Talk</i>)	Honolulu, Jan 2020
X-ray Astronomy 2019 Meeting (<i>Poster</i>)	Bologna, Italy, Sep 2019
High Energy Astrophysics Division 17th Meeting (<i>Poster</i>)	Monterey, Mar 2019
MASC 2019 (<i>Contributed Talk, Local Organizing Committee</i>)	Clemson, Mar 2019
233rd AAS Meeting (<i>Contributed Talk</i>)	Seattle, Jan 2019

Workshops & Schools

CSST summer school at Peking University	Beijing, July 2023
Summer School for Astrostatistics at Penn State	State College, Jun. 2023
End-to-end Simulations with SIXTE Workshop	Virtual, Mar 2022
2022 Submillimeter Array Interferometry School	Virtual, Jan 2022
Winter School at University of Freiburg	Freiburg, Germany, Feb 2015
Summer School at University of California, Berkeley	Berkeley, Jun-July 2014

Assistant and Mentoring Experience

Co-supervision of Clemson graduate student R. Silver	2019-2023
Co-supervision of Clemson undergraduate students D. Cole and Z. Hu	2019
Research Assistant (advisor: Dr. Marco Ajello), Clemson	2018-2020
Teaching Assistant (PHYS 2230), Clemson	2016-2017

Volunteer Service

Volunteer to teach junior and senior high students in rural area	Qiajia, China, July-Aug. 2023
Translate Sensing the Dynamic Universe (allow people with visual disability more accessible to the Universe) project into Chinese	2022-2023

Press Release

Webb Glimpses Field of Extragalactic PEARLS, Studded With Galactic Diamonds	2022
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References

- **Prof. Marco Ajello**
PhD advisor, Clemson University, majello@g.clemson.edu
- **Dr. Francesca Civano**
Postdoc advisor, NASA Goddard Space Flight Center, francesca.m.civano@nasa.gov
- **Dr. Martin Elvis**
Postdoc co-advisor, Center for Astrophysics | Harvard & Smithsonian, melvis@cfa.harvard.edu
- **Dr. Stefano Marchesi**
PhD co-advisor, INAF OAS, Bologna, stefano.marchesi@inaf.it

Publication List

A total of **21** peer-reviewed papers [ADS](#)

- **5 First-author papers**

5. **X. Zhao**, F. Civano, F. M. Fornasini, et al. 2021, MNRAS, 508, 5176
The NuSTAR extragalactic surveys of the JWST North Ecliptic pole Time-Domain Field
4. **X. Zhao**, S. Marchesi, M. Ajello, et al. 2021, A&A, 650, A57
The properties of the AGN torus as revealed from a set of unbiased NuSTAR observations
3. **X. Zhao**, S. Marchesi, M. Ajello, et al. 2020, ApJ, 894, 71
A broadband X-ray study of a sample of AGNs with [OIII] measured inclinations
2. **X. Zhao**, S. Marchesi, M. Ajello, 2019, ApJ, 871, 182
Compton-thick AGN in the NuSTAR Era. IV. A Deep NuSTAR and XMM-Newton View of the Candidate Compton-thick AGN in ESO 116-G018
1. **X. Zhao**, S. Marchesi, M. Ajello, et al. 2019, ApJ, 870, 60
Compton-thick AGNs in the NuSTAR Era. II. A Deep NuSTAR and XMM-Newton View of the Candidate Compton-thick AGN in NGC 1358

- **8 Second/Third author or significantly contributed papers**

8. N. Torres-Albà, M. Stefano, **X. Zhao**, et al., A&A, in press
Hydrogen Column Density Variability in a sample of local Compton-thin AGN
7. R. Silver, N. Torres-Albà, **X. Zhao**, et al., 2023, A&A, 675, A65
A New Mid-Infrared and X-ray Machine Learning Algorithm to Discover Compton-thick AGN
6. R. Silver, N. Torres-Albà, **X. Zhao**, et al. 2022, ApJ, 940, 148
Compton-thick AGN in the NuSTAR Era. IX: A joint NuSTAR and XMM-Newton analysis of four local AGN
5. S. Marchesi, **X. Zhao**, N. Torres-Albà, et al. 2022, ApJ, 935, 114
Compton-Thick AGN in the NuSTAR era VIII: A joint NuSTAR-XMM-Newton monitoring of the changing-look Compton-thick AGN NGC 1358
4. R. Silver, N. Torres-Albà, **X. Zhao**, et al. 2022, ApJ, 932, 43
Chandra Follow-up Observations of Swift-BAT-selected AGNs II

3. N. Torres-Albà, S. Marchesi, **X. Zhao**, et al. 2021, ApJ, 922, 252
Compton-thick AGN in the NuSTAR Era VI: The Observed Compton-thick Fraction in the Local Universe
2. S. Marchesi, M. Ajello, **X. Zhao**, et al. 2019, ApJ, 882, 162
Compton-thick AGNs in the NuSTAR Era. V. Joint NuSTAR and XMM-Newton Spectral Analysis of Three “Soft-gamma” Candidate CT-AGNs in the Swift/BAT 100-month Catalog
1. S. Marchesi, M. Ajello, **X. Zhao**, et al. 2019, ApJ, 872, 8
Compton-thick AGNs in the NuSTAR Era. III. A Systematic Study of the Torus Covering Factor

- 8 Co-author papers

8. I. Cox, ..., **X. Zhao**, et al., ApJ, in press
A simple method to predict N_H variability in active galactic nuclei
7. S. P. Willner, ..., **X. Zhao**, et al., ApJ, in press
PEARLS: JWST counterparts of micro-Jy radio sources in the Time Domain field
6. C. N. A. Willmer, ..., **X. Zhao**, et al., ApJS, in press
PEARLS: Near Infrared Photometry in the JWST North Ecliptic Pole Time Domain Field
5. Q. Yang, ..., **X. Zhao**, et al., 2023, ApJ, 953, 61
Probing the Origin of Changing-look Quasar Transitions with Chandra
4. D. Sengupta, ..., **X. Zhao**, et al., 2023, A&A, 676, A103
Compton-thick AGN in the NuSTAR Era IX: Analysis of seven local CT-AGN candidates
3. R. A. Windhorst, ..., **X. Zhao**, et al. 2023, AJ, 165, 13
Webb’s PEARLS: Prime Extragalactic Areas for Reionization and Lensing Science: Project Overview and First Results
2. A. Pizzetti, ..., **X. Zhao**, et al. 2022, ApJ, 936, 149
A multi-epoch X-ray study of the nearby Seyfert 2 galaxy NGC 7479: Linking column density variability to the torus geometry
1. A. Traina, ..., **X. Zhao**, et al. 2021, ApJ, 922, 159
Compton-Thick AGN in the NuSTAR era VII: a joint NuSTAR, Chandra and XMM-Newton analysis of two nearby, heavily obscured sources

- **Submitted or to be submitted papers**

1. **X. Zhao**, F. Civano, et al., to be submitted to MNRAS in Nov. 2023
The NuSTAR and XMM extragalactic surveys of the JWST North Ecliptic pole Time-Domain Field II
2. N. S. Khatiya, ..., **X. Zhao**, et al. Submitted to ApJ
Characterizing the γ -ray Emission from FR0 Radio Galaxies